

The impact of migration on elderly left behind in Moldova

Citation for published version (APA):

Gassmann, F., Siegel, M., Vanore, M., & Waidler, J. (2012). *The impact of migration on elderly left behind in Moldova*. UNU-MERIT, Maastricht Economic and Social Research and Training Centre on Innovation and Technology. UNU-MERIT Working Papers No. 082

Document status and date:

Published: 01/01/2012

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

UNU-MERIT Working Paper Series

#2012-082

The impact of migration on elderly left behind in Moldova

Franziska Gassmann, Melissa Siegel, Michaela Vanore and Jennifer Waidler

Maastricht Economic and social Research institute on Innovation and Technology (UNU-MERIT)

email: info@merit.unu.edu | website: <http://www.merit.unu.edu>

Maastricht Graduate School of Governance (MGSoG)

email: info-governance@maastrichtuniversity.nl | website: <http://mgsog.merit.unu.edu>

Keizer Karelplein 19, 6211 TC Maastricht, The Netherlands

Tel: (31) (43) 388 4400, Fax: (31) (43) 388 4499

UNU-MERIT Working Papers

ISSN 1871-9872

**Maastricht Economic and social Research Institute on Innovation and Technology,
UNU-MERIT**

**Maastricht Graduate School of Governance
MGSoG**

*UNU-MERIT Working Papers intend to disseminate preliminary results of research
carried out at UNU-MERIT and MGSoG to stimulate discussion on the issues raised.*

The Impact of Migration on Elderly Left Behind in Moldova¹

Franziska Gassmann², Melissa Siegel, Michaella Vanore, Jennifer Waidler
Maastricht Graduate School of Governance, Maastricht University

November 2012

Abstract

The purpose of this paper is to empirically evaluate the well-being of elderly left behind by migrant household members in Moldova. Using data derived from a nationally-representative, large-scale household survey conducted between September 2011 and February of 2012 among 3,255 households in all regions of Moldova (except Transnistria) with a total sample of 1,743 households containing at least one elderly person aged 60 or over, we empirically look at different dimensions of elderly well-being. Well-being of elderly in Moldova is broken down by 5 different dimensions of well-being: physical health and independence, material well-being, housing well-being, social well-being, and emotional health. Each indicator is examined individually and then aggregated together as an index. Well-being is also broken down by age group and migration status of the household (current migrant, return migrant and no migration experience). Migration in and of itself does not seem to have a negative impact on the well-being of the elderly in any of the dimensions analyzed. The age of the elderly and the material living standard experienced by the household are much stronger predictors of well-being in a number of different dimensions. The results suggest that migration does not play a significant role in shaping elderly well-being outcomes, contrary to popular belief.

Key words: migration, care-giver migration, elderly poverty, multi-dimensional poverty, Moldova

JEL codes: I32, J14, J61

¹ This article is derived from data collected in the course of the European Commission-financed project entitled “The Effects of Well-being in Moldova and Georgia on Children and the Elderly Left Behind.” More information on the project and its outputs is available at: http://mgsog.merit.unu.edu/research/moldova_georgia.php.

² Corresponding author: franziska.gassmann@maastrichtuniversity.nl

I. Introduction

The purpose of this paper is to empirically evaluate the well-being of the elderly left behind by migrant kin or household members in Moldova by comparing the differences between elderly individuals (age 60 and over) in non-migrant, current-migrant, and return-migrant households. Outcomes in the dimensions of physical health and independence, material well-being, housing well-being, social well-being, and emotional well-being are compared by age and household migration status, and a multidimensional elderly well-being index is constructed to highlight the multiple deprivations an elderly person may simultaneously face.

Moldova has experienced a spike in emigration since 1999. In 2010 the stock of emigrants living abroad were estimated at 770,000, equalling 21.5 per cent of the population (Ratha, Mohapatra, & Silwal, 2010). Migration has also become increasingly gender diversified. The main destinations for migrants are Russia and Italy, with men mainly going to Russia and women going to Europe. At least half of migrants that leave Moldova are women (Salah, 2008), often migrating to Europe to work in the service or care sector. With the increasing migration of women, concerns have been raised with regard to the care of those who would often be looked after by the women who have migrated.

The strongest link between migration and the well-being of elderly left behind can be made by envisioning migrants not just as *any* household member but as a caregiver. Where elderly individuals are concerned, migration of a caregiver could have both positive and negative effects. Having more resources coming to the household could allow increased investment in health while enabling pensioners with limited resources to meet their daily needs without problems. At the same time the absence of a caregiver could imply less physical help and support as well as emotional difficulties for elderly individuals who experience emotional distress or possible feelings of abandonment.

Using data derived from a nationally-representative, large-scale household survey conducted between September 2011 and February 2012 among 3,255 households in all regions of Moldova (except Transnistria) with a total sample of 1,743 households containing at least one elderly person aged 60 or above, this paper empirically evaluates different dimensions of elderly well-being (poverty). This is the first paper that empirically analyzes multi-dimensional elderly well-being in the Moldovan context.

Section Two discusses theoretical foundations of migration and elderly well-being as well as previous studies. Section Three explains definitions of elderly well-being in the Moldova context. Section Four explains the data and methodology used in the paper. Section Five discusses well-being of elderly individuals in Moldova broken down by five different dimensions of well-being. Each indicator is examined individually and then aggregated together as an index. Well-being is also broken down by age group and by migration status of the household (current migrant, return migrant and non-migrant) and by who has migrated within the household. Section Six concludes with a final discussion.

II. Migration and Elderly Well-Being

Within migration studies the “left behind”, individuals who remain in the country of origin following the migration of a household member, have gathered increasing interest. As investigation into the left-behind phenomenon has deepened, focus on the elderly as a unique group of “left behinds” has revealed that the elderly play a unique role in the post-migration household.

The elderly often occupy a unique and at times contrasting role within households and families. As individuals age, they may become both recipients and givers of care. This may be especially true in migration-affected households in which roles and responsibilities shift to accommodate changes in household composition. The relationship among migration, caregiving, and elderly well-being is complex and difficult to conceptualize, however, particularly as the degree to which elderly individuals must rely on external sources to achieve acceptable states of well-being differs for each individual. There is general consensus that as individuals age, more help will be required to ensure that the individual’s behavioural and cognitive abilities are maintained and expanded. As Steverink, Lindenberg, and Slaets (2005, p 235) explain: “Ageing often implies that reserves and resources in more than one domain decline, and often these losses reinforce each other... a small loss in one domain may lead to downward spirals of resource loss in multiple domains.” The prevention of resource loss is then a key aspect of ensuring elderly well-being, but the process is often beyond an individual’s immediate control. Individuals in general can be said to draw from two types of resources: *external* key resources (such as shelter, food, and social support) and *internal* key resources (skills and abilities that an individual possesses). Internal key resources provide the means by which an individual can manage external key resources; while access to external key resources is an essential step towards well-being, wellness cannot be achieved without the internal resources to utilize such resources properly. In later life, as the balance of gained and lost external resources shifts, internal resources become relatively more important, but the ability to invest in self-management skills and abilities may decline as the result of external resource loss (Steverink *et al*, 2005). This suggests that as an individual ages, relatively more aid is required to help protect against both types of loss; this in turn implies greater reliance on individuals and institutions that not only directly provide external resources but help ageing individuals invest in their own self-management abilities. This resource-based approach to elderly well-being suggests that elderly individuals require at least some external aid to achieve wellness, which migration could substantially affect. Several theories linking migration to elderly well-being can help illustrate this potential link better.

One important starting point is in the idea of care drain, deprivation of care in older ages due to absence of sources of care. The concept of care drain is linked to a number of phenomenon that both fuel and are created by migration, one of the most important of which is the demographic transition. Many states in the former Soviet Union, including Moldova, have undergone intense economic transition accompanied by a blossoming demographic transition. In Moldova this transition is expected to result in a 17 per cent increase in the population aged 60 and above between 2012 and 2050 (UNFPA, 2012). The World Bank (Chawla *et al*, 2007) has predicted that in that same period of time, the population will decline by 308,000 people; while this is likely due to a shortfall of new births, migration may also contribute to this change. With such

growth in the elderly population coupled with population loss due to low fertility rates, the old-age dependency ratio is also expected to significantly increase (Chawla *et al*, 2007).

This transition has important implications for elderly care: first, there are likely to be fewer young individuals capable of providing care to the growing elderly population and, second, the economic burden faced by families wishing to provide care for their elderly members may also increase. While the demographic transition provides a number of challenges to care coordination simply because of the scope of the transition, it becomes additionally problematic when coupled with ongoing economic transition. Fundamental changes to the labour market have resulted in more working-age adults moving to urban areas—both within and beyond state borders—in search of work, which has led to a change in family structures and, subsequently, elderly care practices (King & Vullnetari, 2008). In addition to direct loss of practical and economic support in the form of migrating children (UNFPA, 2012), large-scale migration has also been linked to weakening of informal social care systems that are poorly supplemented by formal support systems (Grant, Falkingham, & Evandrou, 2009). An additional challenge is that informal caregivers are also increasingly aging (UNFPA, 2012). The absence of adult children as well as other young members of extended social networks can contribute to a care drain in which elderly individuals face the ageing process without access to the (physical) external resources traditionally provided by (extended) kin networks.

The challenges to care coordination introduced by the demographic and economic transitions can also be compounded by the commercialization of care and the growth of formal care industries in other countries, which has a clear tie-in to international migration. The former Soviet republics are not the only countries to face the constraints of a rapidly-aging population: many high-income countries in Western Europe face the problem that the elderly population requiring care outpaces the growth of domestically-available caregivers, particularly as states push care work back to families and away from medical institutions (Degiuli, 2007). To supplement this shortfall in care supply, many countries—such as Italy—resort to hiring foreign care workers, sometimes at great scale. The employment of foreign caregivers in domestic care industries can create “global care chains” in which care-givers (often women) migrate to provide professional care services in other locales, often at the expense of their own families (Yeates, 2012; Hochschild, 2000). As Yeates (2005) explains, women are increasingly faced with the dilemma of participating in the labour market while still performing expected domestic duties such as child care and care of aging kin (UNFPA, 2012). To alleviate some of the burden associated with home labour, women hire other women to perform these domestic tasks. The movement of women from unpaid domestic labour in their own households to paid domestic labour in the household of another person naturally shifts the patterns of domestic labour in the household of the hired woman. At the end of such a care chain, typically in a poorer area or country where the woman who has left her own household for paid employment cannot afford to hire a replacement, the remaining care burden falls on someone else within the household, typically an older child (Yeates, 2005). Caregiving can also fall on elderly individuals living in the household such as grandparents, however (Escrivá, 2005). Especially in countries such as Moldova where the large-scale emigration of the working-age population has deprived not only individual households but whole communities of the “middle generation” of adults, caregiving tasks are often passed on to the elderly (HelpAge Int’l, 2008).

The transfer of caregiving tasks to grandparents is not problematic in itself; rather, it is the interconnectedness of resource provision and receipt by elderly individuals in the post-migration household that can pose a challenge. The caregiver of a child, often a non-elderly adult parent, may provide care for an elderly household member as well—thus while children are often seen as the first “victims” of a care shortage, elderly individuals can likewise lose valuable sources of care while often simultaneously assuming child care responsibilities. Migration does not immediately imply complete withdrawal of care, however, particularly when the phenomenon is interpreted through the lens of transnationalism.

Within the transnational approach, migration is envisioned as a process by which migrants become simultaneously engaged in the societies, systems, and contexts provided in both home and host country. Rather than relegating his or her life in the country of origin to the past, migrants continue to function as members of their former countries, societies, communities, and families, albeit from a physical distance. As explained by Levitt and Jaworsky (2007): “Migration has never been a one-way process of assimilation... but one in which migrants, to varying degrees, are simultaneously embedded in the multiple sites and layers of the transnational social fields in which they live.” (pp 130) These social fields can include political, social, economic, cultural, and familial spheres of institutions and activities. Rather than relocating an individual from one country-exclusive set of institutions, activities, and practices to another, migration provides migrants with the opportunity to participate in fluid social spaces that encompass both home and host country (Levitt & Glick Schiller, 2004). Transnationalist interpretation of (caregiver) migration challenges the implicit assumption that absence implies a *drain*. Rather than assuming the complete dissolution of a care relationship following migration, transnationalism suggests that relationships containing a care element do not dissolve but are modified to accommodate the physical distance.

Examples of such reconfiguration can be seen in several past studies that explicitly investigate transnational caregiving. In a study of Estonian migrants providing care for their elderly kin from abroad, Zechner (2008) found that migrants functioned as active members of the caring process despite the physical dislocation by adapting the types of caregiving activities that could be conducted from abroad. While care comprising “hands on” or physical assistance was difficult to transfer from abroad, migrants still coordinated and implemented other forms of caring. The type and degree of caring that a migrant can provide for an elderly member remaining in the country of origin was found to depend on three features: the *distance* between the care-giver and care-recipient, the *resources* the care-giver can harness for care-giving activities, and the *circumstances* in the country of origin that surround the care-recipient. In the course of studying how Italian migrants in Australia coordinate care for their elderly parents in Italy, Baldassar (2007) also suggested three sometimes similar features that affect transnational caring. The first is an individual’s *capacity* to provide care—including the resources necessary to provide the care and to do so across distances. The second feature is *negotiated commitments* between and among family members, which determine whether an individual will actually choose to engage in caregiving, as well as how and when that caring will occur. The third feature is the felt need or *obligation* to provide care experienced by the migrant, which is largely the product of cultural expectations of filial duty and responsibilities. These three features all change over time in accordance to the changes in the lives of the caregiver and receiver in host and home countries (Baldassar, 2007).

Taken together, Zechner (2008) and Baldassar's (2007) features of transnational caregiving suggest that migration will likely bring with it a need to reconfigure the care relationship, which could in turn affect the resources made available to elderly individuals who remain behind. Using these studies as guidance, it could be expected that migration affects care (and well-being by proxy) in the following ways: 1) the type, frequency, and effectiveness of care-giving may depend on the distance between the migrant and the recipient of care and on the migrant's capacity to provide care—greater distance and fewer resources at the disposal of the migrant may reduce transnational caregiving activities; 2) the intensity of given care may be influenced by negotiated commitments among members of a family and the sense of obligation felt by the migrant—the importance of a migrant as a caregiver may depend on the number of other family members who are able and willing to provide care; 3) negotiated commitments and sense of obligation are both culturally-defined and will likely imply different caring patterns among men and women—the gender of the absent migrant is thus expected to affect patterns of transnational caregiving. None of these features would suggest that changes to caregiving patterns as the result of migration would lead to positive or negative impacts on elderly well-being as such, but they importantly identify features of the relationship between the migrant and the elderly individual that influence how resources are transferred and, to some extent, how those resources are translated into positive well-being outcomes.

Within this orientative framework, it could then be anticipated that migration results in changes to both the internal and external resources that an elderly individual utilizes to achieve well-being. Only relatively few studies exist that document the actual effects of migration on the elderly left behind, however. Most research conducted on elderly well-being or quality of life has been conducted in the context of self-management of well-being through ageing, disability and independence management and similar fields that relate more to measurement of well-being for diagnostic and treatment purposes. Unlike such studies that rely on precise measurement of several facets of quality of life, the small and scattered studies into the role of migration in shaping elderly well-being have not covered as much ground. With that said, a brief survey of the studies that have been conducted is useful to explore how migration has been seen to affect well-being.

Much past literature has focused on one of several domains of elderly well-being such as material wealth, physical health, emotional health, and household work. One of the most easily quantified outcomes of migration is remittances, the money that migrants send to family members and friends. On a general level remittances can act as a supplement to household income and can protect the household from adverse economic shocks; the consumption-smoothing effect of remittances can further buoy the working capital households can use to invest in small-scale, productive enterprises (World Bank, 2006). In certain countries remittance receipt has importantly been linked to decreasing poverty headcount and severity (see, for instance, Acosta *et al*, 2007 for Latin America; Adams, 2004 for Guatemala; Adams, 1998 for Pakistan; and Taylor *et al*, 2005 for Mexico). Remittances can form an especially essential part of household income among the most vulnerable households, such as those that contain elderly members. In 2009 Cruc *et al* estimated that the poverty rate among the elderly was 33.1 per cent, which is significantly higher than the general population poverty rate of 25.8 per cent. At the same time remittance constitute a sizeable contribution to total household income: in 2006, in over 60 percent of remittance-receiving households remittances funded more than half of all current expenditures

(Lücke, *et al*, 2006). Remittances may thus play a significant role in reducing vulnerability within recipient households, particularly households containing an elderly member.

While indeed remittances may increase household resilience in monetary terms, migration may imply changes to the household that are less-easily quantified. As was noted earlier, migration can fundamentally change household composition, not only in reducing the number of potential caregivers but also in reducing the number of potential wage earners and sources of other forms of material resources. Particularly if the amount of remittances received in the household do not compensate for lost labour, elderly individuals may be more vulnerable to falling into poverty, depending of course on other factors such as pension schemes and pension entitlements.

In a study of labour emigration from Mexico, Kanaiaupuni (2000) found that emigration can lead to an increase in the number of elderly persons living independently. The transition to non-traditional family living arrangements can have several important implications for the elderly: sources of physical support for daily activities may disappear, leaving the elderly without reliable aid for routine physical activities. This may be mirrored by a lack of emotional support, which in turn can contribute to deteriorating physical health. While the study found that remittances often enabled greater healthcare expenditure among the elderly, the sum was generally not enough to offset the loss of reliable physical support (Kanaiaupuni, 2000). This could be especially problematic where formal institutions or elderly care interventions lacks and informal care networks provide the only reliable means of support.

Another study conducted in Mexico by Antman (2010) further found that the absence of a migrant child could have significant negative consequences for the health of elderly parents left behind. Elderly parents of migrant children were not only more likely to report higher levels of physical and emotional health deterioration but were also more likely to suffer from heart attack or stroke. Antman cautions that the link between reduced physical health and the migration of a child should be more robustly tested and confirmed, but the results suggest that a relationship between the two does exist.

Relatively more research has investigated how the migration of an adult child affects an elderly person's emotional health. King and Vullnetari (2006) writing in Albania and Grant, Falkingham, and Evandrou (2009) writing in Moldova note that the social price of migration for the elderly left behind can be high. Particularly in countries experiencing other structural and socio-economic changes, the migration of children can foster a sense of loss and abandonment that contributes to depression among the elderly. Contrary conclusions have been reached by other studies, however. Abas *et al* (2009) writing in Thailand found that the emigration of adult children was associated with less parental depression, which the authors suggest could reflect the positive effects of remittance receiving as well as household-specific characteristics (like high level of education and relatively better socioeconomic status) that would both enable migration and lead to lower rates of depression in and of themselves.

The interconnectedness of domains of elderly well-being suggests that household-level changes as the result of migration can levy significant effects on specific domains of well-being such as physical or emotional health. Changes to the roles and responsibilities of elderly individuals within the household are of special interest in this regard. Depending on the role a migrant plays within the household prior to migration, the tasks this person leaves may be redistributed among

members of the household. The time allocation patterns of remaining household members may thus significantly change to accommodate new tasks and roles, especially within households in which agricultural production forms a cornerstone of the subsistence or livelihood strategy. As an illustration, a study conducted among children and the elderly in rural areas of China found that time allocation patterns were altered significantly by migration. Compared to their cohorts in non-migrant households, elderly individuals in migrant households dedicated much more time to farm-work, off-farm work, and domestic work, regardless of gender. Within the group of elderly, women experienced the greatest increase in work time (Chang, Dong, & MacPhail, 2010). While an increase in work time does not automatically imply worse well-being outcomes, the older and less mobile individuals within the elderly cohort may be more at risk of suffering health declines as the result of a greater work burden.

Domestic work extends beyond agricultural activities and may also include care-taking duties. Following the migration of a child's habitual caregiver, the caregiving burden may shift to someone else in the household, often an older (female) child or a grandparent. Several studies (Salah, 2008; Prohntchi, 2005) have suggested that elderly individuals may not have the resources or capacities to provide adequate care to children: a study by HelpAge International Moldova (2007), for instance, found that older caregivers often live on limited financial means and receive inadequate state support for children under their care. Caring for children may imply not only an increased financial burden but an emotional one as well, and both children and their elderly caregivers may experience increased stress as the result of the transition in caregiving responsibilities.

The theoretical frameworks for analysing the migration-elderly well-being nexus as well as results from past studies both suggest how elderly well-being may change following migration. While the role of the migrant in the household, and the relationship of the migrant to the elderly person, affect how an elderly individual's well-being will change following migration, several broad effects may be expected:

Table 1: Expected effects of migrations on the elderly well-being

Domain	Expected Effect	Possible Mechanisms
Physical health & independence	+/-	May depend on age of elderly: change in living arrangements may reduce help for physical activities, but remittances may enable healthcare expenditure
Emotional health	-	Sense of loss, isolation, or loneliness after child's migration; less time for social activities
Social inclusion	+/-	Depending on role of elderly in household & who has migrated, greater link to other family/household members but reduced time for social engagement
Material well-being	+/-	Remittance receipt may increase income; shift of caregiving burdens & need for external care may increase expenditures

The results of much past research on the effects of migration on the elderly, particularly in Moldova, may present an inherently unrepresentative picture because sampling has focused on at-

risk groups, such as elderly individuals receiving additional state care. This is not to dismiss the findings of such research but to identify the need to evaluate post-migration elderly well-being systematically. In a similar way, theory may not be as helpful in shaping expectations because of its predominant use in healthcare (and not migration-specific) settings; thus while some expectations can be formed, they are accompanied by the important caveat that elderly individuals affected by migration function in a very specific context that should be considered carefully when evaluating the attainment of well-being.

III. Defining Well-Being

How migration affects well-being naturally depends on how 'well-being' is defined and operationalized. The definition of well-being and its component parts differ significantly by how the concept is used, particularly when assessment of well-being provides a basis for intervention for a specific subset of the population such as the elderly. While the definition of well-being is often the result of pragmatism—matching possible dimensions of wellness to intervention or programme goals—the concept should be additionally rooted in more theoretical perspectives. When considering migration as a potential catalyst for development, it is particularly meaningful to start the process of defining elderly well-being with the capabilities approach.

The capabilities approach, which was first articulated by economist Amartya Sen in the early 1980s, challenges traditional unidimensional means of evaluating well-being and deprivation by conceptualizing achieved well-being as a product of an individual's effective opportunities to do or become that which he or she so desires (which Sen calls “functionings”). An individual's opportunities, or capabilities, determine the functionings that an individual can achieve; lack of capabilities, or the freedom to choose among them, leads to limited realizable functionings—deprivation or poverty (Sen, 1993; Robeyns, 2005). This way of conceptualising well-being is inherently multidimensional, as possible achieved functionings are not restricted to one dimension such as material wealth but instead correspond to the many facets of an individual's life that contribute to an individual's sense of worth and fulfilment. Deprivation in any number of dimensions can thus result in the failure of an individual to achieve well-being (Alkire, 2002; Sen, 1993; Robeyns, 2005; Alkire & Foster, 2011).

Within Sen's envisioning of the capabilities approach, “well-being” is a highly personalized state that differs by individual, and “wellness” cannot be restricted to a “universal” set of constituent parts. While Sen abstained from providing a list of the functionings that are key for an individual to achieve well-being³, defining well-being dimensions and indicators cannot be avoided if empirical measurement of well-being is to occur. The definition of well-being components is a necessary step in order to move from concept to measurement. Previous attempts mainly differ with respect to the underlying conceptual frameworks and the focus of the analysis, such as country versus household (individual) level, or the total population versus a specific sub-group.

The components of well-being differ widely by population, as the capabilities of individuals to achieve desired outcomes differ at different life stages. Elderly well-being—or successful

³ Various listing exercises have attempted to bridge this gap, which Alkire (2002) and Robeyns (2005) briefly survey.

ageing—can be associated with the concept of adaptation, or the ability to cope with the challenges of old age. For example, Brandstadter and Greve (1994) see adaptation as a strategy for successful ageing and define elderly well-being as a “dynamic process of balancing assimilative (maintaining activities), accommodative (flexible goal adjustment) and immunising strategies (selective filtering) with the aim of maintaining a realistic and practical sense of self” (p.12)⁴. Moreover, to define and assess the well-being of the elderly, instruments and conceptual frameworks designed for this specific population must be consulted. The field of gerontology provides a useful perspective in this regard. George and Bearon (1980) define four central aspects of quality of life in an attempt to decide on essential dimensions for the definition of well-being at old age: general health and functional status, socioeconomic status, life satisfaction, and self-esteem⁵. Lawton (1982;1983) developed a concept of quality of life that remains popular. According to this multi-faceted perspective, well-being is comprised of behavioural competence (measured by cognitive dimensions of health and social behaviour), perceived quality of life, psychological well-being (including mental health and personal judgements of life satisfaction), and objective environment, including housing and economic indicators⁶.

Most research on elderly well-being has been conducted by healthcare practitioners in health and geriatric centres across the world who have designed multilevel assessment instruments as a tool to measure quality of life (QoL) among members of the ageing population. These instruments can provide an important starting point to the analysis of the well-being of the elderly left behind. For instance, the Philadelphia Geriatric Centre Assessment defines seven domains of elderly well-being: physical health, time use, cognitive (including mental health) functioning, activities of daily living, social interaction, perceived environment (including housing conditions, access to services in the community, etc.), and personal adjustment (including indicators of emotional wellbeing). Farquhar (1995), measuring the concept of quality of life among individuals 65 years and older living in communities in South East England, found the following domains to be important QOL components: health and mobility, family relationships, social contacts, activities, emotional well-being, and material circumstances. Similarly, in a study conducted among elderly individuals in Sweden, relationships, activities, health, philosophy of life, personal life histories, and having a meaningful future outlook were found to be important aspects of elderly quality of life (Cummins, 2003).

In 1995 the World Health Organization launched an initiative to develop an international quality of life assessment, the goal of which was to produce a multi-dimensional profile of quality of life scores across six domains and 24 sub-domains (WHOQOL, 1995). Within the initiative quality of life was defined as an “individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (WHOQOL, 1995, p.1405). The six domains chosen to represent life quality were physical health, psychological health, level of independence, social relationships, environment, and spirituality/religion/personal beliefs. While the assessment did not target the elderly population explicitly, it was designed to assess individual’s perception of life in relation to their own culture, goals and expectations—features that are expected to differ by stage in the life cycle.

⁴ This definition has been taken from Brown, Bowling and Flynn (2004).

⁵ This definition has been taken from Farquhar (1995).

⁶ This part is taken from Brown, Bawling and Flynn (2004)

Gerontology is not the only field from which helpful well-being definition and measurement constructs can be gleaned; fields like psychology offer important insights as well. The “comprehensive quality of life” (ComQol) measurement instrument of Robert Cummins is one such example. Following review of literature and practice Cummins and colleagues elaborated a list of seven domains of well-being: material well-being, health, productivity, intimacy, safety, community, and emotional well-being. These components of quality of life collectively contribute to well-being (Cummins, 1999). The instrument represents not only some level of consensus—a review of 27 definitions of quality of life found significant overlap with the ComQol—but the instrument has also been validated as a psychometric tool in various clinical settings (Cummins, 1996). Cummins described the instrument as importantly adhering to several principles, namely that quality of life is multidimensional and comprised of both culturally-relevant objective dimensions and respondent-weighted subjective dimensions. Following these principles, a 2003 study investigated how QOL could be conceptualized for elderly Chinese persons who had suffered from strokes. The study used a combination of methods, including focus group interviews, literature reviews, and the generic QOL scale (Cummins, Lau, Chan and McKenna, 2003). In all the three methods, common domains of elderly quality of life were identified: health-related elements such as pain, mobility, and activities of daily living (ADL), subjective well-being measures of life satisfaction or happiness, and social factors including interpersonal relationships and social support.

The last study provides important guidance regarding how elderly well-being can be conceptualized within the capabilities approach by identifying characteristics unique to the 60-and-older age group that should be considered, such as pain and mobility. While the functionings that an individual can achieve influence each other to a certain extent, the relationship among functionings becomes closer with age. Essential functions like maintaining independence—defined as the “ability to perform such functions as bathing, dressing, getting to the toilet... keeping continent and feeding [oneself]” (Fillenbaum, 1984, p.5)—have a direct impact on the degree of attained emotional wellness. Deteriorating physical health, which can be associated with a decline in the capacity to engage in social life and in relationships, can bring with it increased feelings of loneliness (Ward, Barnes and Gahagan, 2012). Based on this concept of functional wellness, researchers and caregivers have identified five basic dimensions that should be considered essential for assessing elderly wellbeing. These are activities of daily living and associated necessary standards of mobility, mental health, physical health, and social and economic functioning (Fillenbaum, 1984). These basic dimensions bear strong resemblance to the QOL domains enumerated above, but their inclusion of elderly-specific components of functional wellness make them especially relevant.

The identified components are all related and mutually reinforcing: deprivation in one dimension—and lack of adequate support to correct that deprivation—will likely contribute to deprivation in another. This process not only compounds the degree of deprivation in any given dimension but also increases the incidence of deprivation across multiple domains (Ward, Barnes and Gahagan, 2012). Moreover, the value given to the different functionings and well-being dimensions also changes as the elderly become older. A study by Farquhar (1995) shows that a high percentage of younger elderly persons value material living standards the most, while the older generations report immobility or lack of help as their highest concern. These differential impacts of age on the relative weight of each component of well-being present a challenge to the

construction of an index for measuring the well-being of the elderly as a group. While the use of an index relies on a certain degree of homogeneity among members of the group, it must be understood that well-being—and its components—vary across different age cohorts. It is thus essential that age is taken into account in analysis in order to judge the extent to which results can be considered ‘normal’ for a given age, which relies on whether thresholds set for establishing normality are appropriate within a given age cohort.

A wealth of previous studies have attempted to measure multidimensional poverty and elderly well-being. Coughlin (2010) performed a large-scale study using Gallup-Healthways Well-being Index (GHWBI) to compare differences in mean scores of several well-being dimensions such as emotional health, physical health or healthy behaviour index among three different age groups: young, mid-life, and senior (above 65 years). The dimensions included in this composite index score were life evaluation, emotional health, physical health, healthy behaviour, work environment, and basic access. In 2011 the Stanford Center on Longevity developed an elderly index aimed at assessing the “overall well-being of older population groups of one country relative to the others and ascertaining which factors contribute to a country’s relative standing” (Kanoda, Lee, and Pollard, 2011, p. 3). The index defines 12 indicators of well being across four dimensions: emotional, social, material, and physical well-being (the last of which includes indicators of mobility and nutrition). A study of the elderly in Singapore using census data defined two big dimensions to analyse old-age well-being: ageing in place and active ageing (Yap, 2009). The first dimension includes health and social indicators that influence the engagement of the elderly in community activities. Active ageing, in contrast, includes participation in formal and informal organizations and groupings, including work participation and a variety of indicators measuring the receipt and provision of support (as the elderly often become caregivers as well). Additional studies analyse multidimensional poverty and well-being for individual countries comparing well-being and poverty across different groups within the given population (e.g. Roelen & Gassmann, 2009, 2012; Roelen *et al*, 2010; Noble *et al*, 2006; Gordon & Nandy, 2007; Nimeh, 2012). The domains or dimensions of well-being selected for any given analysis can generally be traced to normative notions of what constitutes quality of life, but to a certain degree practicality also dictates how the measurement of well-being will occur.

While quality of life contains subjective components and differs considerably by personal and environmental factors such as age, gender, culture or financial and societal factors (Cummins, Lau, Chan and McKenna, 2003), the overlap of dimensions observed from the canvassed sources can suggest convergence toward a basic definition of elderly well-being. The definition of elderly well-being operationalized here is the following:

Well-being is a multidimensional state of personal being comprised of both self-assessed (subjective) and externally-assessed (objective) positive outcomes across five realms of opportunity: physical health or well-being, emotional health, material living standards, housing, and social inclusion.

The definition of well-being used in this study recognizes that there are a multitude of opportunities within an individual’s life that contribute to the achievement of well-being. These elements are seldom context independent and static, changing not only with age but as the result of other complex processes. Migration is one such process that alters the context in which

individuals function, but its effects are not universal and homogenous. Understanding how migration can affect well-being—and through what channels—not only helps frame expectations but also helps highlight the unique vulnerabilities the process of migration introduces to the lives of those affected.

IV. Data and Methodology

IV.A. Data

The data used in this analysis was derived from a nationally-representative, large-scale household survey conducted between September 2011 and February 2012 among 3,255 households in all regions of Moldova (except Transnistria). Of the total sample, 1,743 households contained at least one elderly person aged 60 or older. The survey sample was drawn from the Moldovan Labour Force Survey (LFS) conducted in the second quarter of 2011. Within this sample frame the eligible population was defined as any household with one or more elderly (age 60+) members or one or more child (aged 0-18) members.⁷ The sample was further split into households with or without a current migrant⁸ to ensure that an appropriate (non-migrant) counterfactual group existed with which comparisons could be made.

The survey collected information on the demographic features of household members, household living conditions, members' migration histories, and elderly quality of life. To retain the elderly person as the unit of analysis, one survey section collected information on specific aspects of the individual's daily life, experiences, and resources beyond household-level indicators such as income, expenditures, and living conditions. Within this section questions were asked on topics such as work history, time allocation, physical health and nutrition, mental health, mobility, and relationships with household and non-household members. The structure of the survey and the collection of information from the elderly section generated a wide range of possible well-being indicators that are especially relevant for the elderly in the Moldovan context.

The 1,743 surveyed households containing one or more elderly persons yielded a total sample of 2,278 elderly individuals. Given the importance of household composition for the attainment of elderly well-being, this sample was broken down by household type as defined by four household structures: single elderly person living alone, elderly person living with partner, elderly person living with other adults (including their children/children-in-law, other elderly non-partner individuals, siblings, etc.), and elderly person living with one or more children under the age of 18 (with or without other adults present in the household). The reason for this classification lies in the fact that in developing countries, extended households can be critical for elderly well-being, especially in terms of informal care giving (Kanaiaupuni, 2000) and provision of

⁷ While the aim of the project is to study both the well-being of children and elderly left behind, this paper focuses on the elderly only.

⁸ In total six subgroups were defined: households with children but no elderly persons, both with and without a current migrant member; households with both children and elderly persons, both with and without a current migrant member, and; households with elderly persons but no children, both with and without a current migrant member.

emotional support. Key descriptive characteristics of this population are presented in table 2 below.

Table 2. Key Sample Demographic Characteristics of Elderly Population

Age Cohort	60-69	70-over	Total
Gender			
Male	562 45%	341 33%	903 39%
Female	683 55%	692 67%	1375 61%
Household type			
Alone	174 14%	328 34%	502 23%
With partner	281 27%	249 25%	530 26%
With other adults	377 33%	242 25%	619 30%
With children	413 26%	214 15%	627 21%
Household Migration Status			
Current Migrant	112 11%	161 6%	273 9%
Return Migrant	56 7%	85 4%	141 6%
Non-Migrant	736 82%	1129 90%	1865 85%
Total	1245 55%	1033 45%	2278 100%

Source: Authors' calculations

As can be observed from table 2 above, the sample of elderly individuals is distributed similarly across the four types of households, with the smallest proportion (21 percent) living in households with at least one child below 18 years old, and the largest proportion (30 percent) living in a household with other adults, including other elderly person, adult children, etc. The sample contains a greater proportion of women, and the proportion only increases with age, which is logical considering lower male life expectancy. Moreover, table 2 shows that 15 percent of all households containing an elderly person also contain one or more members who is a current or return migrant.

These descriptive features of the population can be expected to influence analysis. Given the relatively even distribution of elderly individuals across household types, certain types of deprivation would be expected to follow a similar pattern. Elderly individuals living alone, for instance, would be expected to achieve worse outcomes in indicators relating to contact with family members simply because they do not co-reside; a deprivation rate of more than 20 percent in the domain of social inclusion would therefore not be surprising. The distribution of individuals by age and gender would lead to similar expectations. The larger portion of female elderly individuals (living alone) within the oldest age cohort could indicate greater vulnerability to deprivation in emotional health and social inclusion, as the chance of such an individual being a widow, experiencing loss in mobility and independence, and lacking consistent physical support is higher.

Based on the information provided by previous studies measuring well-being, as well as the available survey specifically designed for this analysis, the dimensions used to construct the present elderly well-being index (EWB) were chosen. These are physical well-being, social inclusion, emotional well-being, housing living conditions and material living standards. Some of them appear in most well-being indexes that can be applied to the population as a whole regardless of age. Common domains are economic living conditions, housing, and subjective elements of well-being (including subjective living conditions and self-assessed health status). In addition to these generic domains of well-being, there are other dimensions that capture elderly-specific aspects of well-being, especially those related with physical functioning (Bowling, 2001). Common elements in elderly-specific assessment methods include measures of independence or instrumental activities of daily living (such as the ability to prepare a meal, take a medicine, or shop for groceries), disability indicators measured by the ability to perform basic activities of daily living (previously defined as functional independence), social relationships and contact with adult children, and nutrition. Emotional well-being has been identified as an additional essential domain by several studies, particularly as among the elderly it can be affected by both physical well-being and social relationships (Kaneda, Lee and Pollard, 2011). Based on previous studies and on the available data, the indicators chosen were reported depression and life satisfaction, which classifies an elder person as thriving, struggling or suffering based on the reported rate given to their current life. Finally, the dimension of social inclusion refers to the importance of good relationships with family and community members in shaping well-being outcomes.

The composition and functionality of an index generally relies on data availability, and data quality is one of the problems previous attempts to measure well-being have faced—data often does not exist for a particular dimension or population, or data on different aspects of well-being are scattered among different sources with different functional definitions, making compilation and comparison difficult. Many indexes are thus the result of pragmatism, of weighing ideal indicators of well-being against actual available data. An advantage of single-country studies is the possibility to tailor the selection of indicators and thresholds to the local situation in terms of economic and social well-being as well as prevalent norms and values (Roelen *et al*, 2009). Moreover, the current analysis has the advantage of being able to draw from measurement tools designed not only for the particular population of interest (the elderly) but also for the dimensions of interest identified by previous attempts to operationalize the capabilities approach. Attempts were made throughout the survey development process that elderly individual remain the unit of analysis, thus while some household-level indicators such as income, assets, and living conditions are included, many of the indicators chosen reflect the unique situation and opinion of the elderly person. Table 3 below contains the list of dimensions and indicators for the elderly.

Table 3. Well-being indicators per dimension

PHYSICAL WELL-BEING & INDEPENDENCE	
	Individual has retained essential mobility functions
	Individual is not under or overweight (BMI)
	Individual does not have difficulty self-administering medications
MATERIAL LIVING STANDARD	
	Individual is living in non-poor household
HOUSING	
	Individual is living in house with appropriate flooring, electricity, and access to safe water
SOCIAL INCLUSION	
	Individual has regular contact with family or friends
EMOTIONAL WELL-BEING	
	The individual is satisfied with current life
	The individual is not depressed

IV.B. Methodology

The methodology for the analysis follows a step-wise approach. The purpose is to assess elderly well-being for different groups of elderly. First, each indicator is analyzed separately using descriptive statistics and testing for between-group differences. An elderly individual can be considered not deprived if s/he meets the established well-being threshold set for a given indicator. Indicator well-being rates (*IWB*) are calculated by counting the number of elderly persons who meet the requirement and are expressed as a share of all the elderly:

$$IWB_x = \frac{1}{n} \sum_{i=1}^n I_{ix}$$

where n is the number of elderly for which the indicator is observable and I_{ix} is a binary variable taking the value 1 if the elderly person i has reached the threshold and 0 if the elderly person has not with respect to indicator x . The denominator, n , differs across indicators depending on the number of actual observations.⁹ Indicators observed at household level, such as for monetary well-being or housing, are translated to all elderly persons living in the respective household, assuming equal access and intra-household distribution.

⁹ Missing observations appear to be a serious problem in certain survey modules.

The descriptive analysis of separate indicators is complemented with a multivariate analysis in order to identify other correlates determining elderly well-being, such as personal characteristics of the elderly person and household characteristics. Separate binary outcome models are estimated for selected indicators using standard probit models:

$$\Pr(y_i = 1 | x_i) = \Phi(x_i\beta), \quad \text{with } i = 1, \dots, N$$

where y_i is the binary outcome variable, Φ is the standard normal distribution function, x_i is a vector of explanatory variables, and β is a vector of coefficients to be estimated. In our case the dependent variable is the probability that an individual is vulnerable with respect to a specific indicator. The models are estimated with robust standard errors and results are presented as average marginal effects.

Secondly, we generate a multidimensional well-being index inspired by the methodology developed by Alkire & Foster (2011) for the measurement of multidimensional poverty. An elderly person is considered to be multidimensionally well if the weighted combination of indicators is equal to or exceeds 70 percent of the total. Each domain is assigned equal weight and each indicator within a domain is also equally weighted (see Table 4). On the one hand this facilitates the interpretation (Atkinson et al. 2002) of results but also asserts that each dimension is considered of equal importance. In principal, weights can be determined in various ways, such as through participatory processes, based on expert opinion, or derived from survey data. Setting the cut-off identifying multidimensional well-being is an arbitrary choice. The lower the cut-off, the higher the number of elderly doing well will be, and the lower the average intensity of well-being will be. The decision to set the cut-off at 70 percent of the indicators follows the cut-off used for multidimensional child well-being indices (Roelen & Gassmann, 2012; Gassmann et al., forthcoming).

In establishing the multidimensional well-being index, two steps need to be made. First, all elderly who are well in any indicator are identified (see above) and subsequently assigned the indicator weight, or zero if they have failed to attain wellness. Secondly, an elderly is considered being well if the sum of the weighted indicators is equal or higher than the cut-off value. Elderly individuals with positive outcomes are then assigned a value of one, and all other elderly are assigned a value of zero. Finally, the incidence (or headcount rate) of multidimensional well-being is the percentage of elderly individuals considered well as a portion of all elderly individuals.

Two other measures supplement the multidimensional headcount rate. First, the average intensity of well-being measures the fraction of indicators for which an elderly person has achieved positive values.¹⁰ Second, the adjusted multidimensional well-being rate summarizes the incidence of well-being and its intensity (Alkire & Santos, 2010). Since the methodological analogy with the upside down MPI is no longer applicable for this last step¹¹, we refer to the approach used by Alkire et.al (2011) for the calculation of Gross National Happiness for Bhutan:

¹⁰ We count the number of well-beings and divide by the total number of indicators.

¹¹ In the Alkire & Foster approach, the denominator of the headcount and the intensity are not the same. The total population is used for the headcount, and the poor only are used to calculate intensity.

$$adjMWB = 1 - (MDHC * Intensity)$$

Where adjMWB is the adjusted multidimensional well-being index, MDHC is multidimensional deprivation and intensity the share of indicators the deprived are deprived of.¹²

Table 4. Multidimensional index: dimensions, indicators and weights

Dimension	Indicator	Weights in MDI
Physical well-being	BMI	1/12
	Basic mobility	1/12
	Independence	1/12
Material living standards	Poor household (on basis of expenditures)	1/8
	Appropriate housing	1/8
Social well-being	Contact with adult children	1/4
Emotional well-being	Depression	1/8
	Life satisfaction	1/8
Total		1

V. Results

In this section the results for each indicator will be discussed separately before overall elderly well-being rates are analysed. The elderly are compared across age cohort and by household migration status. The overall level of well-being among the elderly differs considerably across the different indicators. While indicator well-being rates range between 65 and approximately 80 percent in the indicators for material living standards, depression, and independence, the average rates for the indicators disability, nutrition, and life satisfaction range between 45 and 60 percent (table 5).

Physical well-being is comprised of indicators measuring the elderly individual's ability to perform activities of daily living (basic mobility functions) such as bathing, dressing, walking, and going to the bathroom without assistance. It also includes an indicator that measures the individual's ability to take medication without aid (which is used as a proxy to measure functional independence) as well as a nutrition indicator that measures the appropriate weight-for-height (indicating individuals who are underweight or obese). The disability indicator is a composite measure created through factor analysis, which was conducted to determine the underlying factors that explain rates of disability. This factor analysis is based on several dummy variables that measure the elderly individual's ability to perform essential daily functions, all of which are correlated to each other. Based on this analysis, approximately 55 percent of the elderly are considered not disabled (i.e., able to perform basic functions without problem), and, unsurprisingly, the differences among age groups is significant. While less than 30 percent of the elderly between the ages of 60 and 70 years are considered disabled, the rate increases to more than 60 percent for the oldest cohort. Functional independence is measured by the ability to self-administer medicine, as this activity requires high levels of mental cognisance (in terms of

¹² It can be shown that MDHC= 1- MWB, however the deprivation intensity is not equal to one minus well-being intensity because of the difference in the denominator.

administering the correct dosage, following timing instructions, etc.) and is also correlated with other activities that measure elderly independence (Kaneda, Lee and Pollard, 2011). As with the case of disability, well-being rates change significantly across age groups: while the youngest cohort show well-being rates of 80 percent, well-being rates lower than 60 percent are identified among the oldest age group. Migration status affects the disability indicator, with elderly individuals living in return and current migrant households showing higher rates of well-being than their counterparts in non-migrant households. In spite of expecting worse health outcomes for the elderly left behind as a consequence of a care drain and lower family support, the fact that children of elderly persons with better health may be more likely to migrate could explain this result.

Finally, the body mass index (BMI) indicator (based on the arm length as a proxy for height and weight) is used to identify those individuals who are overweight or obese. In this case, differences among age-groups are not significant, with the percentage of the elderly with normal weight remaining at around 60 percent for each age group. Migration status appears to have no effect on nutritional well-being. This finding may indicate that attainment of “normal” weight (defined as a BMI between 18.5 and 27) is a challenge for elderly individuals, and many possible factors may contribute to this such as limited access to high quality foods, limited mobility due to physical degeneration, or the promotion of sedentary lifestyles. It may also indicate that BMI should be better refined for the elderly Moldovan population, as the thresholds for normal weight are given for the adult population in general and may not adequately measure body fat percentages in the elderly population. In a study of elderly individuals (aged 65 and older) in the United States, Diehr *et al* (2008) found that elderly persons with a BMI of above 25 were not more likely than their healthy-weight counterparts to experience health problems, and in some cases being overweight led to significantly better health outcomes. This may be because additional weight acts as a protective measure against age-related health conditions such as osteoporosis, so while being obese may still present a challenge to the attainment of physical wellness among the elderly, BMI in and of itself may not provide the most adequate measure of physical health.

Characteristics like age and household structure—which are important determinants of elderly well-being—can also be linked to other aspects of an elderly individual's daily life such as time allocation. Among the entire sample, the greatest portion of the day (40 percent) is allocated to sleeping, followed by domestic tasks (19 percent), and hobbies like watching television or listening to the radio (18 percent). The remaining part of the day is spent on caring for children, working on paid activities or visiting friends, although these three taken together account for only three hours per day on average. It could be expected that time allocation patterns among the elderly differ significantly by household composition and migration status. Elderly individuals living in households with children would be expected to spend more time on caregiving activities and domestic tasks, especially if the household contains a migrant. Table 5 shows how this expectation has been met within the sample.

Table 5: Time allocation by household type, migration status, age and sex, hours per day

	Caregiving Tasks	Domestic Tasks	Tasks on family Business	Activities for pay outside of household	Hobbies	Seeing friends	Sleeping
Household type							
Alone	0.12 (0.5%)	5.8 (24%)	0.7 (3%)	0.36 (1.5%)	5 (21%)	1.2 (5%)	10.8 (45%)
With partner	1.2 (5%)	4.8 (20%)	0.96 (4%)	0.43 (1.8%)	4.8 (20%)	1.4 (6%)	10.3 (43%)
With other adults	1.2 (5%)	4.3 (18%)	1.2 (4%)	0.7 (2.8%)	4.8 (20%)	1.4 (6%)	10.56 (44%)
With children	3.4 (14%)	3.36 (14%)	1 (3%)	0.6 (2.4%)	4.32 (18%)	1.2 (5%)	10.3 (43%)
<i>Significance level</i>	***	***	***	*			***
Household Migration Status							
Current Migrant	2.64 (11%)	4 (17%)	1.2 (5%)	0.7 (3%)	4.32 (18%)	1.4 (6%)	9.8 (41%)
Return Migrant	1.9 (8%)	4.32 (18%)	0.7 (3%)	0.24 (1%)	4.8 (20%)	1.68 (7%)	10.3 (43%)
Non-Migrant	1.2 (5%)	4.8 (20%)	0.7 (3%)	0.7 (3%)	4.8 (20%)	1.4 (6%)	10.6 (44%)
<i>Significance level</i>	***	***			**		***
Sex							
Male	1.2 (5%)	3.6 (15%)	0.96 (4%)	0.72 (4%)	5 (21%)	1.68 (7%)	10.56 (44%)
Female	1.4 (6%)	5.28 (22%)	0.72 (3%)	0.48 (2%)	4.56 (19%)	1.2 (5%)	10.56 (44%)
<i>Significance level</i>	***	***	***	***	***	***	***
Age group							
60-69	1.68 (7%)	4.56 (19%)	0.96 (4%)	0.96 (4%)	4.8 (20%)	1.44 (6%)	10.08 (42%)
70+	0.96 (4%)	4.8 (20%)	0.72 (3%)	0.12 (0.5%)	4.8 (20%)	1.2 (5%)	11.3 (47%)
<i>Significance level</i>	***	***	***	***	***	***	***

Source: Authors' calculations. Percentage distribution between parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

As Table 5 shows, differences in time allocation are significant across sex, age groups and household composition. Big differences are observable with regard to care giving tasks: elderly individuals living in households with children as well as in migrant households spend significantly more time on caregiving than other elderly individuals. As may be anticipated, elderly individuals who live alone allocate more time to domestic tasks. While time allocation is not included in the analysis as an indicator of well-being, it is worthwhile to discuss in brief because of the potential implications of distribution of household tasks on the attainment of well-being. As was mentioned prior, migration can necessitate a shift in tasks and responsibilities

within the household; as the elderly in current migrant households spend slightly more time on caregiving tasks, it could be proposed that the caregiving burden shifts following migration. While the difference in time spent on caregiving tasks between elderly individuals living in current migrant and return/non-migrant households is small, it may indicate additional pressure is placed on the elderly, particularly members of the oldest cohort or those with fewer resources at their disposal. At the same time, the greater caregiving burden placed on the elderly may indicate a greater level of social inclusion, as elderly individuals may be placed in closer contact with family members following migration.

While many instruments exist for measuring the dimension of emotional well-being, there is limited consensus on the best tool to use, on standards of measurement, and on thresholds for defining deprivation or health, particularly across disciplines. Based on previous studies and on the available data, the indicators chosen to measure emotional health were self-reported depression and self-reported current life satisfaction. These two indicators indicate level of self-perceived wellness. Depression and life satisfaction were measured using a set of questions designed for the mental health inventory (MHI-38)¹³, an instrument exclusively designed to measure mental health among the elderly. The choice to measure depression using self-reported questions reflects the view that self-reported measure are usually better than clinical diagnostic tools, as they measure causes of late-life depression, such as coping with chronic illnesses, disability, feeling of loneliness, etc. (Kaneda, Lee and Pollard, 2011). Based on these self-reported measures, the rate of total reported depression is around 30 percent, with the rate for the oldest cohort slightly higher than the average. Analysing depression rates by migration status, the difference is not significant; the expectation that feelings of loneliness, sporadic contact with family, and high-stress situations will contribute to higher rates of depression among the elderly with children living abroad were not met in analysis. The indicator of life satisfaction was measured using a ten-point Likert scale in which respondents rated satisfaction with their current life. Based on the Cantril Self-Anchoring Striving Scale¹⁴, a score of seven or higher indicates that an individual is “thriving” or satisfied with his/her own life. Well-being rates in this indicator are rather low, with less than 50 percent attaining well-being; differences across age groups and migration statuses are non-significant.

The dimension of social inclusion encompasses relationships with family and community members, as both types of social ties are important in shaping well-being outcomes. Extensive literature supports the idea that a good relationship with family and people in the community helps improve overall elderly well-being (Ward, Barnes and Gahagan, 2012; Kaneda, Lee and Pollard, 2011; Fillenbaum, 1984). Care support from family and friends—or the lack thereof as a consequence of living far away from each other—has been identified as an important component of social functioning. The reduction of informal care due to the migration of adult children or changes in family roles and household composition can make the elderly more dependent on other sources of formal care, which often comes at a higher price than informal care. This becomes a source of vulnerability for those who cannot access or afford such formal services, which suggests that economic resources become relatively more important in the absence of

¹³ SOURCE: *Mental Health National Outcomes and Casemix Collection: Overview of clinician-rated and consumer self-report measures, Version 1.50*. Department of Health and Ageing, Canberra, 2003.

¹⁴For more information, see: <http://www.gallup.com/poll/122453/understanding-gallup-uses-cantril-scale.aspx>

informal resource pooling arrangements such as a family or household members. Household structure also influences the support and care received by the elderly. For instance, in multi-generational households (containing children and “middle generation” adults), more than 95 percent of the elderly needing support actually receive it. Lack of needed help is higher in other household types, with only 55 percent of all elderly persons living alone receiving required support. In households where the elderly individual lives with a partner, 73 percent received needed support (although the percentage of females receiving support is 10 percentage points lower than males). This breakdown already provides a suggestion of how social inclusion can differ within the population, which is supported by the single chosen indicator for social inclusion. The social inclusion indicator is based on whether an elderly individual has contact with his/her adult children at least once a week. For the case of those elderly who do not have children, well-being rates depend on whether the elderly live or have contact with family or friends. Based on this, 62 percent of the elderly are not deprived in social well-being, and neither age group nor migration status appear to have an effect, as the statistical difference between them is non-significant.

When analysing material living standards in households with one or more elderly individuals, both income and expenditure are valuable indicators, as both are sensitive to household composition and size. When the elderly individual's income is calculated as a proportion of total income, it is found that the elderly contribute least in multi-generational households or households containing children, in which their average contributions account for 35 percent of the total household income. The proportion of elderly-contributed income to total household income rises in households containing other adults but no children, where the elderly individual's average contribution is relatively high at 45 percent. Finally, the average contribution of those living with a partner is approximately 50 percent. The source of income provides additional detail about material living standards. On average, 84 percent of elderly individuals' income comes from social assistance (mainly old age pension), which is received by approximately 84 percent of the elderly population. When analysing material living standards specifically within migrant households, remittances are revealed as an important source of income as they represent, on average, 23 percent of total household income. Not all migrant households are recipients of remittances, however: 40 percent of migrant households have received remittances in the last year, and less than 50 percent of all migrant households have received remittances sometime in the past.

Material living standard is measured by the average household expenditures per adult equivalent. The elderly living in households with average expenditures below 60 percent of the median are considered to be deprived. More than 80 percent of the elderly are living in non-poor households. Differences between age groups are not significant. Household migration status appears to have more of an effect on material well-being: elderly individuals in non-migrant households appear to have higher material well-being rates (80 percent), followed by return migrant households (74 percent) and finally by current migrant households, which show the lowest rates of well-being at 65 percent. This result can be potentially explained if poorer households are more likely to include a migrant, but the direction of the relationship is difficult to establish. It could be proposed that migration is undertaken as a way to supplement households income (thus poorer households may be more likely to include a migrant), but it could also be that the migration of a primary wage earner within the household results in lower household material living standards. In addition to differences in expenditure levels, poverty rates also differ considerably among

different households: while less than six percent of households with elderly individuals living alone or with a partner are considered poor, 20 percent of households where an elderly person lives with other adults (including their children/children-in-law, other elderly non-partner individuals, siblings, etc.), and nearly 32 percent of households both with an elderly person and one or more children under the age of 18 have a per capita income below the national poverty line.

Table 6. Elderly well-being rates by age group.

Indicator	60-69	n° obs	70-over	n° obs	total	n° obs total	p-value
The elderly person is not overweight or underweight (BMI)	58.35	989	60.25	839	59.24	1828	0.47
The elderly person is not disabled in terms of basic mobility	71.74	1090	37.45	939	55.71	2029	0.00
The elderly person has no difficulties taking medications	82.73	1067	57.09	917	70.77	1984	0.00
The elderly person has contact with adult children (or family or friends in case of not having children) at least once a week	62.82	1089	60.44	938	61.71	2027	0.21
The elderly person is living in non-poor household	82.54	1245	88.62	1033	85.33	2278	0.30
The elderly person is not depressed	71.89	1058	64.95	869	68.71	1927	0.01
The elderly person has a positive life satisfaction indicator	39.07	960	34.91	818	37.1	1778	0.17
The elderly person lives in appropriate housing (floor, water, electricity)	80.04	1245	76.26	1033	78.3	2278	0.04

Source: Authors' calculations

Housing well-being is the second-most frequently attained of all dimensions after material living standards, with around 78 percent of all the elderly enjoying appropriate housing conditions. An elderly person is considered not deprived in this indicator if they have access to appropriate flooring, electricity, and to a safe source of drinking water. The differences across age groups are significant, with the oldest cohort attaining slightly higher well-being rates. With regard to migration status, the well-being rates are higher for individuals in return migrant households (as compared to migrant and non-migrant ones), and these differences are significant at a 10 percent level. This finding appears to suggest that increased economic resources through remittances would enable expenditure on investments such as housing, which most studies of remittance usage confirm (see for instance, Parreñas 2005; UNDP, 2009; World Bank, 2006).

Table 7. Elderly well-being rates by migration status

Indicator	n° obs	migrant	return migrant	non-migrant	total	p-value
The elderly person is not overweight or underweight (BMI)	1828	60.67	53.54	59.5	59.24	0.49
The elderly person is not disabled in terms of basic mobility	2029	66.87	65.11	53.97	55.71	0.00
The elderly person has no difficulties taking medications	1984	76.44	74.73	69.95	70.77	0.20
The elderly person has contact with adult children (or family or friends in case of not having children) at least once a week	2027	58.49	58.95	62.21	61.71	0.56
The elderly person is living in non-poor household	2278	65	74.37	88.14	85.33	0.00
The elderly person is not depressed	1927	68.42	72.06	66.92	67.42	0.40
The elderly person has a positive life satisfaction indicator	1778	37.32	38.48	36.98	37.1	0.90
The elderly person lives in appropriate housing (floor, water, electricity)	2278	76.95	86.71	77.88	78.3	0.07

Source: Authors' calculations

Table 8. Multidimensional well-being index for elderly

	Incidence of well-being	Intensity of well-being	Adjusted well-being index
Total	44.85	0.82	0.73
Migrant household	44.35	0.84	0.71
Return migrant household	48.09	0.83	0.74
Non-migrant household	44.65	0.81	0.74
Significance			
Age 60-69	50.47	0.84	0.77
Age 70-+	38.38	0.79	0.69
Significance	***		

Source: Authors' calculations. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Overall, 45 percent of the elderly are multi-dimensional well, meaning that the weighted sum of the indicator is equal to or larger than 0.7. Migration status of the household does not make a difference, while the very old have a significantly lower well-being incidence. On average the elderly population is doing well in 82 percent of the indicators. For the 60-69-year-old cohort this is 85 percent, and for the very old cohort, 79 percent. The adjusted well-being index is 0.73 on average without any noticeable difference by migration status.

Table 9. Determinants of indicator well-being¹⁵

Variable	Not poor		House		Bmi		Takes medication		Mobile		Contact		Not-depressed		Satisfied	
	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se
Age 70 and older	0.036	**	-0.010	ns	0.012	ns	-0.207	***	-0.229	***	-0.021	ns	-0.004	ns	0.027	ns
	0.018		0.026		0.033		0.026		0.027		0.029		0.028		0.036	
Migration status																
Migrant household	-0.147	***	-0.050	ns	-0.089	ns	0.019	ns	0.095	ns	0.050	ns	-0.054	ns	-0.092	ns
	0.032		0.054		0.064		0.056		0.064		0.062		0.055		0.065	
Return migrant household	-0.072	**	0.052	ns	-0.051	ns	0.006	ns	0.011	ns	-0.024	ns	-0.080	ns	-0.021	ns
	0.036		0.044		0.063		0.053		0.067		0.055		0.063		0.055	
Receives remittances	0.202	***	0.038	ns	0.019	ns	0.022	ns	-0.042	ns	-0.070	ns	0.012	ns	0.194	***
	0.043		0.056		0.067		0.061		0.066		0.069		0.066		0.067	
Ln (per capita expenditures)			0.008	ns	-0.041	*	0.034	ns	0.017	ns	-0.008	ns	0.030	ns	0.057	**
			0.017		0.025		0.022		0.024		0.022		0.025		0.029	
Observations	1460		1460		1460		1460		1460		1460		1460		1460	
F statistic	8.29		3.43		1.14		9.61		11.60		6.10		3.42		3.85	
Prob>F	0.000		0.000		0.300		0.000		0.000		0.000		0.000		0.000	

Source: Authors' calculations. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. ns not significant

¹⁵ The full model is shown in the appendix (table 3).

The conducted analysis occurred in three steps. In the first set of regressions, only personal and regional characteristics are included as explanatory variables of the different well-being indicators. In the second step, dummy variables indicating migration status (migrant, return and non-migrant households) are included in the regressions. Finally, the model is extended to include a set of elderly characteristics (such as support from other family members, education, labour status, per capita expenditure and remittances, etc.), which are also related to the migration status and thus help to provide an unbiased estimation of the effect of migration on well-being. This methodology enables us to observe how the effect of the variables indicating migration status changes when new explanatory variables are added to the model. Table 9 shows the results of the extended model, and all other regressions are available in the appendix.

With the exception of mobility, material living standard, and appropriate housing, the migration status of the elderly household was not relevant in determining well-being. The results from the multivariate analysis as reported in Table 9 confirm these findings. With respect to the material living standard of the elderly, the migration-relevant variables produce contradictory results. Having a current migrant in the household reduces material well-being compared to non-migrant households, all else being equal. At the same time the receipt of remittances has a positive effect. The fact that not each migrant sends remittances may explain these results. The migrant status loses its predictive power when analysing basic mobility. Age is the only explanatory variable that remains statistically significant, meaning that mobility well-being decreases once the elderly is 70 years or older. Receiving remittances also has a positive association with life satisfaction.

Among the other explanatory variables included in the model (see for full model the appendix), only few are significantly related with elderly well-being. Elderly individuals who provide support to their adult children are likely to be more mobile and have no problems with self-medication. Unsurprisingly, this group has a higher likelihood of having regular contact with family members. Receiving support from adult children is likewise positively related with contact with family members. In addition, elderly individuals receiving support are also less likely to feel depressed. Nevertheless, this variable is negatively correlated with nutritional status and mobility. Elderly individuals with higher level of attained education have a higher probability of being well with respect to most individual indicators. Living in proper housing condition is also positively correlated with well-being with respect to mobility, not feeling depressed, life satisfaction and, not surprisingly, material living standards.

Finally, the multivariate analysis conducted for the overall multidimensional index (c.f. annex, table 4) shows that irrespective of model, the variables of age, sex and region remain significant determinants for multi-dimensional well-being. By extending the model, the explanatory power increases, and the effect of the region where the elderly person lives becomes stronger. Other important explanatory variables are labour market status (participation in paid work) and giving and/or receiving support to/from family members, both of which positively influence multi-dimensional well-being.

Table 10 illustrates the results of the adjusted multidimensional well-being index. Age and being disabled or ill are negatively correlated with well-being. Migration status is also negatively associated with multidimensional wellbeing, albeit not significantly. Being male, in paid work, giving or receiving support from adult children, living in a proper house, and higher expenditure

are all positively associated with well-being. Receiving remittances is also positive, however, it is only significant at the one percent level.

Table 10. Determinants of adjusted multidimensional well-being

	b	se	P>t
Age 70 and older	-0.055	0.014	0.000
Male	0.038	0.013	0.003
Moldovan	0.003	0.016	0.852
Labour market status			
Paid work	0.063	0.023	0.007
Disabled/ill	-0.107	0.034	0.002
Other status	-0.018	0.038	0.633
Receives pension	0.019	0.019	0.317
Support to adult children	0.065	0.019	0.001
Receives support from adult children	0.049	0.017	0.005
Urban area	0.015	0.022	0.503
Hh with employed member	0.016	0.023	0.500
highest education in household			
upper secondary	-0.005	0.029	0.872
post secondary	-0.005	0.022	0.804
higher education	0.037	0.026	0.147
Hh composition			
with partner	0.041	0.022	0.066
With other adults	-0.012	0.028	0.674
with children	-0.041	0.042	0.327
household size	-0.006	0.009	0.560
Proper house	0.110	0.016	0.000
Migration status of household			
Migrant household	-0.040	0.031	0.207
Return migrant household	-0.042	0.029	0.155
receives remittances	0.057	0.036	0.116
Ln(per capita expenditures)	0.028	0.014	0.057
Constant	0.374	0.128	0.004
N	1460		
R2	0.151		
Prob>F	0.000		

Source: Authors' calculations. OLS regression; dependent variable: adjusted well-being rate; robust standard errors.

VI. Discussion

This is the first paper of its kind to empirically measure the well-being of the elderly in Moldova across different dimensions of well-being by household migration status using a large-scale household survey. This paper has demonstrated the use of an index to evaluate the well-being of the elderly in Moldova across five different dimensions of well-being: physical health, material well-being, housing, social well-being, and emotional well-being. Each indicator within each

dimension is examined individually and then aggregated to form an index, and multiple methods of both bivariate and multivariate analysis are used to check the robustness of results.

We find that age matters for well-being across different dimensions, and older individuals are usually less well off. We find significant differences in the specific dimensions of well-being. Household migration status is negatively associated with poor households, but remittance receiving is positively associated with poor households. The incidence and intensity of poverty is only significant for age but not migrant status. When looking at multidimensional well-being, we find that age and being disabled or ill are negatively correlated with well-being. Migration status is also negatively associated with multidimensional wellbeing but not at a significant level. Being male, in paid work, giving or receiving support from adult children, living in a proper house, and expenditure are all positively associated with well-being. These results suggest that elderly individuals living in households with migration experiences do not suffer from many of the problems that are associated with care-giver absence when compared to other elderly persons. This paper demonstrates the importance of evaluating each dimension individually, as the results by group and by dimension varied.

VII. References

- Abas, M.A., S. Punpuing, T. Jirapramukpitak, P. Guest, K. Tangchonlatip, M. Leese, and M. Prince (2009). "Rural-Urban Migration and Depression in Ageing Family Members Left Behind." *The British Journal of Psychiatry* 195: 54-60.
- Acosta, P., P. Fajnzylber, and J.H. Lopez (2007). *The Impact of Remittances on Poverty and Human Capital: Evidence from Latin America Household Surveys*, in Ç. Özden and M. Schiff (eds.), *International Migration, Economic Development and Policy*. Palgrave Macmillan: New York.
- Adams, R.H. (2004). "Remittances and poverty in Guatemala". *World Bank Policy Research Working Paper 3418*. World Bank: Washington, D.C.
- Adams, R.H. (1998). "Remittances, investment and rural asset accumulation in Pakistan." *Economic Development and Cultural Change* 47 (1): 155-173.
- Alkire, S. (2002). "Dimensions of Human Development". *World Development* 30(2): 181-205.
- Alkire, S. & J. Foster (2011). "Counting and Multidimensional Poverty Measurement." *Journal of Public Economics* 95: 476-497.
- Alkire, S. and M.E. Santos (2010). "Acute Multidimensional Poverty: A New Index for Developing Countries." Oxford Poverty and Human Development Initiative Working Paper No. 38. Oxford Department of International Development, University of Oxford: United Kingdom.
- Bourguignon, F. and S.R. Chakravarty (2003). "The Measurement of Multidimensional Poverty." *Journal of Economic Inequality* 1(1): 25-49.

(de) Brauw, A., and J. Giles (2008). "Migrant Labor Markets and the Welfare of Rural Households in the Developing World: Evidence from China." *World Bank Policy Research Working Paper 4585*, Washington, D.C.: World Bank.

Brooks-Gunn, J., & Duncan, G. (1997). The Effects of Poverty on Children. *The Future of Children*, 7(2), 55-71.

Brown, R. I. (2003). *Quality of life and disability: An approach for community practitioners*. Jessica Kingsley Publishers.

Cruc, O., et al. (2009). "Study on Social Protection and Social Inclusion in Moldova". Institute for Development and Social Initiatives "Viitorul" on behalf of the European Commission, Directorate General for Employment, Social Affairs and Equal Opportunities. Chişinău: Commission of the European Communities.

Cummins, R. (1996). "The Domains of Life Satisfaction: An Attempt to Order Chaos." *Social Indicators Research* 38: 303-328.

Cummins, R. (1999). "A Psychometric Evaluation of the Comprehensive Quality of Life Scale—Fifth Edition." In L.Y. Lim, B.K.P. Yuen, and C. Löw, eds. *Urban Quality of Life: Critical Issues and Options*. Chapter 3: pgs 32-46. National University of Singapore.

Diehr, P., E.S. O'Meara, A. Fitzpatrick, A.B. Newman, L. Kuller, and G. Burke (2008). "Weight, Mortality, Years of Healthy Life, and Active Life Expectancy in Older Adults." *Journal of the American Geriatrics Society* 56(1): 76-83.

Falkingham, J., Baschieri, A., Evandrou, M., & Grant, G. (2009). "Left behind in transition? The well-being of older people in Tajikistan". *Reinventing Retirement: Reshaping Health and Financial Security for the EU*, 27.

Farquhar, M. (1995). Elderly people's definitions of quality of life. *Social Science & Medicine*, 41(10), 1439–1446.

Fillenbaum, G. (1984). "The Wellbeing of the Elderly: Approaches to Multidimensional Assessment". WHO Offset Publication No. 84. Center for the Study of Aging and Human Development, Duke University Medical Center: USA/ World Health Organization: Geneva.

Fukuda-Parr, S. (2003). "The Human Development Paradigm: Operationalising Sen's Ideas on Capabilities." *Feminist Economics* 9(2-3): 301-317.

Goodman, R. (1997). "The Strengths and Difficulties Questionnaire: A Research Note". *Journal of Child Psychology and Psychiatry* 38: 581-586.

Gordon, D., Nandy, S., Pantazis, C., Pemberton, S., & Townsend, P. (2003) *Child Poverty in the Developing World*. Bristol: Policy Press.

- Gordon, D. & Nandy, S. (2007) *Child Poverty in Haiti in the 21st century*, Bristol University and UNICEF Haiti, New York.
- Gullone, E. & R. Cummins (1999). "The Comprehensive Quality of Life Scale: A Psychometric Evaluation with an Adolescent Sample." *Behaviour Change* 16(2): 127-139.
- (de) Haas, H. (2008). "Migration and Development: A Theoretical Perspective." *Working Paper No. 9*, International Migration Institute, University of Oxford: Oxford.
- Kaneda, T., Lee, M., Pollard, K. (2011). *SCL/PRB Index of Well-Being in Older Populations*. Stanford Center on Longevity.
- Kanaiaupuni, S.K (2000). "Leaving Parents Behind: Migration and Elderly Living Arrangements in Mexico." *Center for Demography and Ecology Working Paper No. 99-16*. University of Wisconsin: Madison.
- Lau, A., Mckenna, K., Chan, C., & Cummins, R. (2003). Defining quality of life for Chinese elderly stroke survivors. *Disability & Rehabilitation*, 25(13), 699–711.
- Levitt, P. and N. Glick Schiller (2004). "Conceptualising simultaneity: a transnational social field perspective on society." *International Migration Review* 38: 1002-39.
- Levitt, P., and B.N. Jaworsky (2007). "Transnational Migration Studies: Past Developments and Future Trends." *Annual Review of Sociology* 33: 129-156.
- Massey, D.S., J. Arango, G. Hugo, A. Kouaouci, A. Pellegrino, and J.E. Taylor (1993). "Theories of International Migration: A Review and Appraisal." *Population and Development Review* 19 (3): 431-466.
- Mutran, E., & Reitzes, D. C. (1984). Intergenerational support activities and well-being among the elderly: A convergence of exchange and symbolic interaction perspectives. *American Sociological Review*, 117–130.
- Nimeh, Z. S. (2012), *Social Citizenship Rights: Inequality and Exclusion*, Boekenplan, Maastricht.
- Noble, M., Wright, G., & Cluver, L. (2006). Developing a Child-Focused and Multidimensional Model of Child Poverty for South Africa. *Journal of Children and Poverty*, 12(1), 39-53.
- Notten, G. and K. Roelen (2010) "Cross-national comparison of monetary and multidimensional child poverty in the European Union: puzzling with the few pieces that the EU-SILC provides", BWPI Working Paper 135/2010, Brooks World Poverty Institute, Manchester.
- Nussbaum, M. (1999). "Women and Equality: The Capabilities Approach." *International Labour Review* 138(3): 227-245.

- Peleah, M. (2007) Impact of Gender Roles on Migration in Moldova. *Development and Transition* 8, UNDP.
- Piperno, F. (2011). The Impact of Female Emigration on Families and the Welfare State in Countries of Origin: The Case of Romania. *International Migration*.
- Prohntchi, V. (2005). "Poverty of the Children of Moldovan Migrants." *Expert-Grup project report*.
- Ratha, D., Mohapatra, S. and Silwal, A. (2010). *Migration and Remittances Factbook 2011*. World Bank.
- Robeyns, I. (2005). "The Capability Approach: A Theoretical Survey." *Journal of Human Development and Capabilities* 6(1): 93-117.
- Roelen, K., Gassmann, F., and C. de Neubourg (2009), 'The Importance of Choice and Definition for the Measurement of Child Poverty - the case of Vietnam', in *Journal for Child Indicators Research*, 2(3), pp. 245-263.
- Roelen, K., and F. Gassmann (2009) "Equal Opportunities for all children in Vietnam- assessing the distribution of child poverty from a monetary and multidimensional perspective", in *Journal of Income Distribution*, 18(3-4), pp. 206-231.
- Roelen, K., Gassmann, F., and C. de Neubourg (2010), 'Child Poverty in Vietnam - providing insights using a country-specific and multidimensional model', in *Social Indicators Research*, 98(1), pp. 129-145.
- Roelen, K. and F. Gassmann (2012), *Child Well-Being in Kazakhstan*, UNICEF Kazakhstan, Astana.
- Salah, MA (2008). "The Impacts of Migration on Children in Moldova." *United Nations Children's Fund Working Paper*. United Nations Children's Fund, Division of Policy and Practise: New York.
- Sen, A. (1993). "Capability and Well-being." In M. Nussbbaum and A. Sen, eds. *The Quality of Life*. Clarendon Press: Oxford.
- Smith, A., R.N. Lalonde, and S. Johnson (2004). "Serial Migration and its Implications for the Parent Child Relationship: A Retrospective Analysis of the Experiences of the Children of Caribbean Immigrants." *Cultural Diversity and Ethnic Minority Psychology* 10(2): 107-122.
- Stark, O. and D.E. Bloom (1985). "The New Economics of Labour Migration." *American Economic Review* 75: 173-178.
- Stark, O., C. Helmenstein, and A. Prskawetz (1998). "Human Capital Depletion, Human Capital Formation, and Migration: A Blessing or a 'Curse'?" *Economics Letters* 60: 363-367.

Taylor, J.E., J. Arango, G. Hugo, A. Kouaouci, D. Massey, & A. Pellegrino (1996). "International Migration and Community Development." *Population Index* 62 (3): 397-418.

Taylor, J.E. (1999). "The New Economics of Labour Migration and the Role of Remittances in the Migration Process." *International Migration* 37(1): 63-88.

Taylor, J.E., J. Mora, R. Adams, and A. Lopez-Feldman (2005). "Remittances, Inequality, and Poverty: Evidence from Rural Mexico." Agriculture and Resource Economics Working Papers Number 05-003. University of California, Davis.

The WHOQOL Group (1995). "The World Health Organization Quality of Life Assessment (WHOQOL): Position Paper from The World Health Organization". *Soc. Sci. Med.* 41 (10): 1403-1409.

United Nations Development Program (2009). Human Development Report 2009: Overcoming Barriers - Human Mobility and Development. United Nations Press: Tokyo.

United Nations Population Fund (UNFPA), 2012. "Ageing in the Twenty-First Century: A Celebration and a Challenge." United Nations Population Fund (New York) and HelpAge International (London). Accessed online from www.unfpa.org/webdav/site/global/shared/documents/publications/2012/Ageing-Report_full.pdf.

Ward, L., Barnes, M., & Gahagan, B. (2012). Well-being in old age: findings from participatory research. University of Brighton and Age Concern, Brighton. Retrieved from http://eprints.brighton.ac.uk/10631/1/Well_being_in_old_age_findings_from_participatory_research_full_report.pdf.

World Bank (2006). *Global Economics Prospects: Economic Implications of Remittances and Migration 2006*. World Bank Press: Washington, D.C.

Yang, D. (2008). "International Migration, Remittances and Household Investment: Evidence from Philippine Migrants' Exchange Rate Shocks." *The Economic Journal* **118**: 591-630.

Yap, M.T. (2009). *Report on the State of the Elderly 2009*. Ministry of Community Development, Youth, and Sports, Singapore.

Appendix

Table 1. Determinants of indicator well-being: reduced model including only main demographic and regional explanatory variables

Variable	Non-poor		House		Bmi		Takes medication		Mobility		Contact		Not-depressed		Satisfied	
	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se
Age 70 and older	0.057	***	-0.012		0.002		-0.223	***	-0.274	***	-0.015		-0.029		-0.01	
	0.019		0.024		0.03		0.023		0.025		0.028		0.026		0.034	
Male	0.06	***	0.033	*	0.048		0.048	**	0.108	***	0.005		0.093	***	0.022	
	0.018		0.019		0.032		0.024		0.024		0.028		0.028		0.027	
Moldovan	-0.073	**	-0.024		-0.003		-0.04		-0.064	*	0.021		-0.039		0.062	
	0.03		0.036		0.04		0.037		0.037		0.035		0.039		0.053	
Urban area	0.074	**	0.183	***	-0.062		-0.072		-0.047		-0.027		0.058		0.066	
	0.03		0.035		0.041		0.049		0.053		0.041		0.051		0.052	
Regions (ref category: Chisinau)																
Centre	-0.016		-0.124	*	0.007		-0.243	***	-0.235	***	-0.147	**	-0.016		-0.078	
	0.05		0.067		0.076		0.086		0.082		0.066		0.083		0.089	
North	0.032		-0.117	*	-0.012		-0.125	*	-0.166	**	-0.141	**	-0.049		-0.126	
	0.046		0.061		0.073		0.071		0.068		0.055		0.064		0.085	
South	-0.021		-0.066		0.033		-0.271	***	-0.163	***	-0.183	***	0.061		0.087	
	0.049		0.068		0.079		0.07		0.075		0.061		0.066		0.09	
Receives a pension	0.14	***	-0.057		-0.004		-0.065	*	-0.069	*	-0.014		-0.028		0.001	
	0.023		0.03		0.039		0.039		0.038		0.042		0.033		0.044	
Observations	1461		1461		1461		1461		1461		1461		1461		1461	
F statistic	11.12		6.64		0.81		19.2		19.25		1.53		2.8		3.01	
Prob>F	0.00		0.00		0.00		0.00		0.00		0.15		0.007		0.004	

Source: Authors' calculations. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2. Determinants of indicator well-being: extended model including main demographic and regional variables, and migration status of the household.

Variable	Non-poor		House		Bmi	Takes medication		Mobility		Contact	Not-depressed		Satisfied
	dy/dx		dy/dx		dy/dx	dy/dx		dy/dx		dy/dx	dy/dx		dy/dx
	se		se		se	se		se		se	se		se
Age 70 and older	0.049	**	-0.013		-0.001	-0.221	***	-0.27	***	-0.013	-0.031		-0.01
	0.019		0.024		0.031	0.023		0.025		0.028	0.026		0.035
Male	0.055	***	0.034	*	0.046	0.049	**	0.109	*	0.005	0.092	***	0.022
	0.017		0.018		0.032	0.024		0.024		0.028	0.027		0.027
Moldovan	-0.072	**	-0.022		-0.004	-0.04		-0.064	*	0.021	-0.039		0.062
	0.03		0.036		0.04	0.037		0.037		0.035	0.039		0.053
Urban area	0.067	**	0.18	***	-0.063	-0.07		-0.043		-0.025	0.058		0.066
	0.031		0.035		0.041	0.049		0.053		0.041	0.051		0.052
Regions (ref category: Chisinau)													
Centre	-0.011		-0.125	*	0.01	-0.243	***	-0.236	***	-0.148	**	-0.015	-0.079
	0.05		0.067		0.076	0.086		0.081		0.066	0.083		0.089
North	0.032		-0.119	*	-0.011	-0.125	*	-0.166	**	-0.141	**	-0.049	-0.127
	0.045		0.061		0.071	0.071		0.068		0.054	0.064		0.084
South	-0.004		-0.065		0.039	-0.274	***	-0.17	**	-0.187	***	0.064	0.087
	0.048		0.068		0.078	0.07		0.075		0.062	0.066		0.09
Receives a pension	0.119	***	-0.056	**	-0.014	-0.058		-0.056		-0.009	-0.033		0.003
	0.023		0.031		0.039	0.039		0.039		0.042	0.034		0.045
Migration status													
Migrant household	-0.135	***	-0.035		-0.049	0.04		0.087	**	0.048	-0.028		-0.004
	0.03		0.037		0.043	0.042		0.043		0.048	0.044		0.047
Return migrant household	-0.079	**	0.056		-0.064	0.023		0.048		0.011	-0.027		0.029
	0.035		0.043		0.053	0.056		0.059		0.057	0.059		0.053
Observations	1461		1461		1461	1461		1461		1461	1461		1461
F statistic	9.74		5.43		0.78	15.25		15.68		1.27	2.21		2.39
Prob>F	0.00		0.00		0.00	0.00		0.00		0.26	0.02		0.01

Source: Authors' calculations. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3. Determinants of indicator well-being: full model

Variable	Non-poor		House		Bmi		Takes medication		Mobility		Contact		Not-depressed		Satisfied	
	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se	dy/dx	se
Age 70 and older	0.036	**	-0.010		0.012		-0.207	***	-0.229	***	-0.021		-0.004		0.027	
	0.018		0.026		0.033		0.026		0.027		0.029		0.028		0.036	
Male	0.043	***	0.025		0.042		0.042	*	0.068	***	0.032		0.064	**	-0.002	
	0.016		0.019		0.031		0.024		0.028		0.028		0.031		0.025	
Moldovan	-0.037		-0.016		-0.022		-0.031		-0.067	**	0.047		-0.011		0.094	*
	0.027		0.037		0.037		0.037		0.035		0.037		0.038		0.050	
Urban area	0.023		0.153	***	-0.037		-0.109	**	-0.12	**	0.007		0.005		0.015	
	0.027		0.034		0.047		0.045		0.049		0.042		0.051		0.051	
Regions (ref category: Chisinau)																
Centre	-0.01		-0.13	**	-0.003		-0.264	***	-0.245	***	-0.182	**	-0.019		-0.082	
	0.042		0.063		0.075		0.085		0.082		0.069		0.079		0.089	
North	0.031		-0.112	*	-0.029		-0.134	*	-0.154	**	-0.178	***	-0.042		-0.131	
	0.038		0.058		0.07		0.072		0.071		0.059		0.065		0.081	
South	-0.003		-0.067		0.026		-0.282	***	-0.165	**	-0.205	***	0.064		0.085	
	0.039		0.065		0.076		0.07		0.075		0.068		0.065		0.087	
Receives a pension	0.095	***	-0.057	*	-0.025		-0.023		0.013		0.024		0.008		0.021	
	0.023		0.033		0.043		0.037		0.04		0.044		0.038		0.045	
Labour market status																
Paid work	0.04		-0.039		0.009		0.061		0.118	**	0.063		0.151	***	0.19	***
	0.036		0.042		0.065		0.053		0.058		0.046		0.056		0.039	
Disability/ill	0.05		-0.093	*	-0.011		-0.146	***	-0.221	***	-0.107	***	-0.115	*	-0.039	
	0.052		0.054		0.076		0.055		0.061		0.057		0.063		0.079	
Other	-0.074	*	-0.006		-0.066		0.143		0.149		-0.069		0.001		-0.085	
	0.043		0.067		0.086		0.089		0.094		0.079		0.08		0.083	
Giving support	-0.032		0.046		0.091	**	0.123	***	0.153	***	0.145	***	-0.005		0.043	
	0.023		0.029		0.039		0.033		0.03		0.035		0.034		0.036	
Receiving support	-0.016		-0.014		-0.072	*	0.001		-0.101	***	0.242	***	0.068	**	-0.02	
	0.022		0.032		0.039		0.031		0.032		0.033		0.033		0.038	
Is at least one person in the hh employed?	0.158	***	0.014		-0.052		0.004		-0.012		0.022		0.036		0.027	
	0.029		0.03		0.049		0.035		0.044		0.042		0.045		0.04	
Education (ref category: lower secondary)																
Upper secondary	0.074	*	0.044		-0.06		0.015		0.02		-0.036		0.003		-0.003	

	0.035		0.043		0.055		0.048		0.047		0.05		0.056		0.055
Post- secondary	-0.003		0.046		-0.036		0.051		0.144	***	-0.071		0.016		-0.025
	0.022		0.037		0.043		0.037		0.037		0.043		0.038		0.045
Higher education	0.045		0.092	**	-0.053		0.108	**	0.19	***	-0.076		0.12	***	0.026
	0.032		0.042		0.05		0.051		0.046		0.057		0.045		0.053
Household composition															
Living with a partner	0.02		0.033		0.072		-0.019		0.024		0.037		0.058		0.032
	0.032		0.039		0.047		0.036		0.038		0.046		0.043		0.051
Living with adults	-0.156	***	-0.009		0.121	**	-0.099	**	-0.055		0.01		0.005		-0.033
	0.03		0.035		0.052		0.05		0.05		0.039		0.04		0.061
Living in households with children	-0.214	***	-0.076	*	0.079		-0.14	**	-0.047		-0.083	*	0.034		-0.025
	0.036		0.039		0.055		0.059		0.055		0.05		0.05		0.066
Proper house	0.037	*			0.01		0.026		0.106	***	-0.011		0.079	**	0.107
	0.019				0.036		0.033		0.032		0.033		0.033		0.042
Migration status															
Migrant household	-0.147	***	-0.050		-0.089		0.019		0.095		0.050		-0.054		-0.092
	0.032		0.054		0.064		0.056		0.064		0.062		0.055		0.065
Return migrant household	-0.072	**	0.052		-0.051		0.006		0.011		-0.024		-0.080		-0.021
	0.036		0.044		0.063		0.053		0.067		0.055		0.063		0.055
Receives remittances	0.202	***	0.038		0.019		0.022		-0.042		-0.070		0.012		0.194
	0.043		0.056		0.067		0.061		0.066		0.069		0.066		0.067
Ln (per capita expenditures)			0.008		-0.041	*	0.034		0.017		-0.008		0.030		0.057
			0.017		0.025		0.022		0.024		0.022		0.025		0.029
Observations	1460		1460		1460		1460		1460		1460		1460		1460
F statistic	8.29		3.43		1.14		9.61		11.60		6.10		3.42		3.85
Prob>F	0.000		0.000		0.300		0.000		0.000		0.000		0.000		0.000

Source: Authors' calculations. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4. Determinants of multidimensional well-being index.

Variable	MDI		MDI		MDI	
	dy/dx		dy/dx		dy/dx	
	se		se		se	
Age 70 and older	-0.103	***	-0.102	***	0.086	***
	0.029		0.029		0.028	
Male	0.066	**	0.066	**	0.063	**
	0.031		0.031		0.029	
Moldovan	0.002		0.002		0.034	
	0.04		0.04		0.037	
City	0.052		0.052		0.012	
	0.053		0.054		0.052	
Regions (ref category: Chisinau)						
Centre	-0.185	**	-0.185	**	0.196	***
	0.077		0.077		0.073	
North	-0.149	**	-0.149	**	0.151	***
	0.062		0.062		0.058	
South	-0.12	**	-0.121	**	-0.129	***
	0.064		0.064		0.058	
Receives a pension	-0.008		-0.006		0.041	
	0.037		0.037		0.041	
Migration status						
Migrant household			0.00		-0.014	
			0.047		0.06	
Return migrant household			0.022		-0.035	
			0.059		0.06	
Labour market status						
Paid work					0.104	**
					0.043	
Disability/ill					-0.251	***
					0.068	
Other					-0.111	
					0.09	
Giving support					0.165	***
					0.038	
Receiving support					0.102	***
					0.034	
Post- secondary					-0.033	
					0.041	
Higher education					0.009	
					0.052	
Household composition						
Living with a partner					0.041	
					0.047	
Living with adults					-0.021	
					0.045	
Living in households with children					0.104	**
					0.05	
Proper house					0.279	***
					0.034	
Receives remittances					0.024	
					0.076	
Ln (per capita expenditures)					0.026	
					0.022	
Observations	1461		1461		1460	
F statistic	5.9		4.9		8.4	
Prob>F	0.00		0.00		0.00	

Source: Authors' calculations. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The UNU-MERIT WORKING Paper Series

- 2012-01 *Maastricht reflections on innovation* by Luc Soete
- 2012-02 *A methodological survey of dynamic microsimulation models* by Jinjing Li and Cathal O'Donoghue
- 2012-03 *Evaluating binary alignment methods in microsimulation models* by Jinjing Li and Cathal O'Donoghue
- 2012-04 *Estimates of the value of patent rights in China* by Can Huang
- 2012-05 *The impact of malnutrition and post traumatic stress disorder on the performance of working memory in children* by Elise de Neubourg and Chris de Neubourg
- 2012-06 *Cross-national trends in permanent earnings inequality and earnings instability in Europe 1994-2001* by Denisa Maria Sologon and Cathal O'Donoghue
- 2012-07 *Foreign aid transaction costs* by Frieda Vandeninden
- 2012-08 *A simulation of social pensions in Europe* by Frieda Vandeninden
- 2012-09 *The informal ICT sector and innovation processes in Senegal* by Almamy Konté and Mariama Ndong
- 2012-10 *The monkey on your back?! Hierarchical positions and their influence on participants' behaviour within communities of learning* by Martin Rehm, Wim Gijssels and Mien Segers
- 2012-11 *Do Ak models really lack transitional dynamics?* by Yoseph Yilma Getachew
- 2012-12 *The co-evolution of organizational performance and emotional contagion* by R. Cowan, N. Jonard, and R. Weehuizen
- 2012-13 *"Surfeiting, the appetite may sicken": Entrepreneurship and the happiness of nations* by Wim Naudé, José Ernesto Amorós and Oscar Cristi
- 2012-14 *Social interactions and complex networks* by Daniel C. Opolot
- 2012-15 *New firm creation and failure: A matching approach* by Thomas Gries, Stefan Jungblut and Wim Naudé
- 2012-16 *Gains from child-centred Early Childhood Education: Evidence from a Dutch pilot programme* by Robert Bauchmüller
- 2012-17 *Highly skilled temporary return, technological change and Innovation: The Case of the TRQN Project in Afghanistan* by Melissa Siegel and Katie Kuschminder
- 2012-18 *New Technologies in remittances sending: Opportunities for mobile remittances in Africa* Melissa Siegel and Sonja Fransen
- 2012-19 *Implementation of cross-country migration surveys in conflict-affected settings: Lessons from the IS Academy survey in Burundi and Ethiopia* by Sonja Fransen, Katie Kuschminder and Melissa Siegel
- 2012-20 *International entrepreneurship and technological capabilities in the Middle East and North Africa* by Juliane Brach and Wim Naudé
- 2012-21 *Entrepreneurship, stages of development, and industrialization* by Zoltan J. Ács and Wim Naudé
- 2012-22 *Innovation strategies and employment in Latin American firms* by Gustavo Crespi and Pluvia Zuniga
- 2012-23 *An exploration of agricultural grassroots innovation in South Africa and implications for innovation indicator development* by Brigid Letty, Zanele Shezi and Maxwell Mudhara
- 2012-24 *Employment effect of innovation: microdata evidence from Bangladesh and Pakistan* by Abdul Waheed

- 2012-25 *Open innovation, contracts, and intellectual property rights: an exploratory empirical study* by John Hagedoorn and Ann-Kristin Ridder
- 2012-26 *Remittances provide resilience against disasters in Africa* by Wim Naudé and Henri Bezuidenhout
- 2012-27 *Entrepreneurship and economic development: Theory, evidence and policy* by Wim Naudé
- 2012-28 *Whom to target - an obvious choice?* by Esther Schüring and Franziska Gassmann
- 2012-29 *Sunk costs, extensive R&D subsidies and permanent inducement effects* by Pere Arqué-Castells and Pierre Mohnen
- 2012-30 *Assessing contingent liabilities in public-private partnerships (PPPs)* by Emmanouil Sfakianakis and Mindel van de Laar
- 2012-31 *Informal knowledge exchanges under complex social relations: A network study of handloom clusters in Kerala, India* by Robin Cowan and Anant Kamath
- 2012-32 *Proximate, intermediate and ultimate causality: Theories and experiences of growth and development* by Adam Szirmai
- 2012-33 *Institutions and long-run growth performance: An analytic literature review of the institutional determinants of economic growth* by Richard Bluhm and Adam Szirmai
- 2012-34 *Techniques for dealing with reverse causality between institutions and economic performance* by Luciana Cingolani and Denis de Crombrugghe
- 2012-35 *Preliminary conclusions on institutions and economic performance* by Denis de Crombrugghe and Kristine Farla
- 2012-36 *Stylized facts of governance, institutions and economic development. Exploring the institutional profiles database* by Bart Verspagen
- 2012-37 *Exploring the Panel Components of the Institutional Profiles Database (IPD)* by Luciana Cingolani and Denis de Crombrugghe
- 2012-38 *Institutions and credit* by Kristine Farla
- 2012-39 *Industrial policy for growth* by Kristine Farla
- 2012-40 *Explaining the dynamics of stagnation: An empirical examination of the North, Wallis and Weingast approach* by Richard Bluhm, Denis de Crombrugghe and Adam Szirmai
- 2012-41 *The importance of manufacturing in economic development: Past, present and future perspectives* by Wim Naudé and Adam Szirmai
- 2012-42 *Lords of Uhuru: the political economy of elite competition and institutional change in post-independence Kenya* by Biniam Bedasso
- 2012-43 *Employment and wages of people living with HIV/AIDS* by Pilar García-Gómez, José M. Labeaga and Juan Oliva
- 2012-44 *Prescriptions for network strategy: Does evidence of network effects in cross-section support them?* by Joel A.C. Baum, Robin Cowan, and Nicolas Jonard
- 2012-45 *Perspectives on human development theory in democracy promotion: A comparison of democracy promotion programmes in Egypt through the lenses of classical and revised modernisation theory* by Inger Karin Moen Dyrnes
- 2012-46 *Nonlinearities in productivity growth: A semi-parametric panel analysis* by Théophile T. Azomahou, Bity Diene and Mbaye Diene
- 2012-47 *Optimal health investment with separable and non-separable preferences* by Théophile T. Azomahou, Bity Diene, Mbaye Diene and Luc Soete
- 2012-48 *Income polarization and innovation: Evidence from African economies* by Théophile T. Azomahou and Mbaye Dien

- 2012-49 *Technological capabilities and cost efficiency as antecedents of foreign market entry* by Fabrizio Cesaroni, Marco S. Giarratana and Ester Martínez-Ros
- 2012-50 *Does the internet generate economic growth, international trade, or both?* by Huub Meijers
- 2012-51 *Process innovation objectives and management complementarities: patterns, drivers, co-adoption and performance effects* by Jose-Luis Hervás-Oliver, Francisca Sempere-Ripoll and Carles Boronat-Moll
- 2012-52 *A systemic perspective in understanding the successful emergence of non-traditional exports: two cases from Africa and Latin America* by Michiko Iizuka and Mulu Gebreeyesus
- 2012-53 *Determinants of quadric patenting: Market access, imitative threat, competition and strength of intellectual property rights* Can Huang and Jojo Jacob
- 2012-54 *Envy and habits: Panel data estimates of interdependent preferences* by Jose Maria Casado, Francisco Alvarez-Cuadrado, Jose Maria Labeaga and Dhanoos Sutthiphisal
- 2012-55 *The impact of Medium-Skilled immigration: A general equilibrium approach* by Joan Muysken, Ehsan Vallizadeh and Thomas Ziesemer
- 2012-56 *Tax incentives or subsidies for R&D?* by Isabel Busom, Beatriz Corchuelo and Ester Martínez Ros
- 2012-57 *The impact of development aid on education and health: Survey and new evidence from dynamic models* by Thomas Ziesemer
- 2012-58 *Do R&D tax incentives lead to higher wages for R&D workers? Evidence from the Netherlands* by Boris Lokshin and Pierre Mohnen
- 2012-59 *Determinants of the prevalence of diarrhoea in adolescents attending school: A case study of an Indian village school* by Shyama V. Ramani, Timothée Frühauf, Arijita Dutta and Huub Meijers
- 2012-60 *Communication costs and trade in Sub-Saharan Africa* by Evans Mupela and Adam Szirmai
- 2012-61 *Differential welfare state impacts for frontier working age families* by Irina S. Burlacu and Cathal O'Donoghue
- 2012-62 *Microeconomic evidence of financing frictions and innovative activity* by Amaresh K Tiwari, Pierre Mohnen, Franz C. Palm, Sybrand Schim van der Loeff
- 2012-63 *Globalization and the changing institution for sustainability: The case of the Salmon farming industry in Chile* by Michiko Iizuka and Jorge Katz
- 2012-64 *Chronic and transitory poverty in the Kyrgyz Republic: What can synthetic panels tell us?* by Mira Bierbaum and Franziska Gassmann
- 2012-65 *Worker remittances and government behaviour in the receiving countries* by Thomas H.W. Ziesemer
- 2012-66 *Switching the lights off: The impact of energy tariff increases on households in the Kyrgyz Republic* by Franziska Gassmann
- 2012-67 *The dynamics of renewable energy transition in developing countries - The case of South Africa and India* by Radhika Perrot
- 2012-68 *Government R&D impact on the South African macro-economy* by Radhika Perrot, David Mosaka, Lefentse Nokaneng and Rita Sikhondze
- 2012-69 *The determinants of home based long-term care utilisation in Western European countries* by Sonila M Tomini, Wim Groot and Milena Pavlova
- 2012-70 *Paying informally for public health care in Albania: scarce resources or governance failure?* by Sonila M Tomini and Wim Groot

- 2012-71 *Learning and the structure of citation networks* by François Lafond
- 2012-72 *Political determinants of sustainable transport in Latin American cities* by Carlos Cadena Gaitán
- 2012-73 *Community cohesion and inherited networks - A network study of two handloom clusters in Kerala, India* by Anant Kamath and Robin Cowan
- 2012-74 *Learning and convergence in networks* by Daniel C. Opolot and Théophile T. Azomahou
- 2012-75 *Optimal multi-phase transition paths toward a stabilized global climate: Integrated dynamic requirements analysis for the 'tech fix'* by Paul A. David and Adriaan van Zon
- 2012-76 *European investment promotion agencies vis-à-vis multinational companies from emerging economies: Comparative analysis of BRIC investor targeting* by Sergey Filippov
- 2012-77 *Migration and multi-dimensional poverty in Moldovan communities* by Melissa Siegel and Jennifer Waidler
- 2012-78 *Entrepreneurship and innovation in a hybrid political order: The case of Lebanon* by Nora Stel
- 2012-79 *Optimal multi-phase transition paths toward a global green economy* by Adriaan van Zon and Paul A. David
- 2012-80 *Determinants of the rural nonfarm economy in Tajikistan* by Aziz Atamanov and Marrit van den Berg
- 2012-81 *Industrialization, employment and poverty* by Alejandro Lavopa and Adam Szirmai
- 2012-82 *The impact of migration on elderly left behind in Moldova* by Franziska Gassmann, Melissa Siegel, Michaela Vanore and Jennifer Waidler